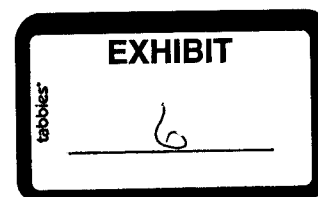




# Continuing Planning Process



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**with contribution from  
Oklahoma Water Resources Board**

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## CHAPTER 1

### INTRODUCTION AND OVERVIEW

The Continuing Planning Process (CPP) is required by the Clean Water Act (CWA) § 303(e)(3)(A)-(H) and 40 CFR § 130.5. The document is required on an annual basis and describes the water quality programs implemented within the State. The document also describes present and planned water quality management programs and the strategy to be used by the State in conducting these programs.

### PRIMARY AGENCIES

<b>Corp. Comm.</b>	Oklahoma Corporation Commission
<b>OCC</b>	Oklahoma Conservation Commission
<b>DEQ</b>	Oklahoma Department of Environmental Quality
<b>ODM</b>	Oklahoma Department of Mines
<b>ODWC</b>	Oklahoma Department of Wildlife Conservation
<b>OSDA</b>	Oklahoma State Department of Agriculture
<b>OSE</b>	Office of the Secretary of Environment
<b>OWRB</b>	Oklahoma Water Resources Board

### OTHER AGENCIES

<b>ACOG</b>	<i>Association of Central Oklahoma Governments</i> One of three regional planning agencies designated by the Governor to provide planning for the State under the CWA. The current director of ACOG is Zach Taylor.
<b>AG</b>	<i>Attorney General</i> The Attorney General's Office provides legal counsel and representation for Oklahoma's state agencies.
<b>ODOC</b>	<i>Oklahoma Department of Commerce</i> This agency is responsible for conducting population projections used in the Water Quality Management Plan.
<b>EPA</b>	<i>Environmental Protection Agency</i> The primary federal agency responsible for administering various environmental programs. It is responsible for restoring and maintaining the physical, chemical, and biological integrity of the nation's environment.
<b>INCOG</b>	<i>Indian Nations Council of Governments</i> One of three designated regional planning agencies in Oklahoma. This agency is designated by the Governor to provide planning for the State under the CWA. The current director of INCOG is Jerry Lasker.

**OGS** *Oklahoma Geological Survey* A state agency under the direction of the University of Oklahoma that does research on the geological, mineral, and water resources in the State and makes the information discovered available to the public.

**USGS** *United States Geological Survey* The USGS is a federal agency that works closely with state agencies to gather water quality, geological, and geohydrological data.

#### **PROGRAMMATIC TERMS**

**A-95** A Congressionally mandated review system that establishes a network of state, metropolitan and regional planning and development clearinghouse. The system provides rules and regulations governing the formulation, evaluation and review of Federal programs and projects having a significant impact on area and community development

**104** *Section 104 of the CWA* This section of the CWA provides federal grants for water quality management activities and other special projects.

**106** *Section 106 of the CWA* This section of the CWA provides annual grants to the states for use in controlling and abating water pollution control problems.

**201** *Section 201 of the CWA* This section of the CWA provided federal grants for construction of wastewater treatment facilities. The construction grant process provided for direct federal matching grants of up to 75% (85% in some cases) of the cost of planning, improving, or building sewage treatment plants and their connecting sewers to local governments to help them meet their CWA responsibilities. NOTE: Funding for 201 Program was discontinued in Federal Fiscal Year 1990.

**205** *Section 205 of the CWA* This section, 205(j), of the CWA provides federal grants for water quality management activities.

**208** *Section 208 of the CWA* This section of the CWA provided federal grants for water quality management. In short, the purpose of the 208 program was to provide for sound decision making by state and local officials. The 208 process tied together several water pollution control programs and enabled the development of abatement requirements for municipal, industrial, residual waste, storm runoff, and ground water pollution control. NOTE: Funding for the 208 Program was discontinued in Federal Fiscal Year 82.

**257** *Section 257 of the CWA* These rules were promulgated on September 19, 1979 and provided the first national guidance standards for sewage sludge use and disposal. These regulations set forth requirements for sludge treatment and sludge quality for the practices of land application and land filling. The State of Oklahoma rules for sludge management are modeled after the 257 requirements and are in some cases more stringent.

- 258** *Section 258 of the CWA* These rules were promulgated on October 9, 1991 and provide for non hazardous sludge disposal at landfills. These regulations set forth sludge quality requirements for landfills to accept and dispose of sewage sludge. Sewage sludge that is not land applied and is non-hazardous will be disposed of at landfills in Oklahoma.
- 301** *Section 301 of the CWA* This section of the CWA requires the achievement of EPA established effluent limitations for industrial and municipal point sources of pollution.
- 303** *Section 303 of the CWA* This section of the CWA requires states to review and, if necessary, revise their Water Quality Standards, at least once every three years, beginning in 1972.
- 303(d)** *Section 303(d) of the CWA* This section requires states to identify waters that do not or are not expected to meet applicable Water Quality Standards with technology-based controls alone. States are required to establish a priority ranking for the waters, taking into account the pollution severity and designated uses of the waters. Once identification and priority ranking are completed, states are to develop Total Maximum Daily Loads at a level necessary to achieve the applicable state Water Quality Standards.
- 303(e)** *Section 303(e) of the CWA* This section requires each state to prepare a Continuing Planning Process document.
- 304(l)** *Section 304(l) of the CWA* This section was enacted as part of the Water Quality Act of 1987 and requires the identification of those waters that fail to meet Water Quality Standards due to toxic pollutants and other sources of toxicity. It also requires the preparation of individual control strategies that will reduce point source discharges of toxic pollutants.
- 305(b)** *Section 305(b) of the CWA* This section of the CWA established a process for preparing and submitting the Water Quality Assessment Report. This process was established as a means for the U.S. Environmental Protection Agency and the U.S. Congress to determine the status of the Nation's waters.
- 314** *Section 314 of the CWA* This section of the CWA established the Clean Lakes Program for the states. Section 314 provides federal funds for the State to submit a classification of lakes according to eutrophic condition, develop processes and methods to control sources of pollution and to work with other agencies in restoring the quality of these lakes.
- 319** *Section 319 of the CWA* This section requires the development of a State Assessment Report and a Management Program for Nonpoint Source (NPS) pollution problems. The Assessment Report is to describe the nature, extent, and effects of NPS pollution, the causes and sources of such pollution, and programs and methods used for controlling this pollution. The Management Program explains what the State intends to accomplish in the next four fiscal years to address NPS problems.

- 401** *Section 401 of the CWA* This section of the CWA requires any applicant for a Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters, to provide the licensing or permitting agency a certification from the State in which the discharge originates or will originate, or, if appropriate, from the interstate water pollution control agency having jurisdiction over the navigable waters at the point where the discharge originates or will originate.
- 402** *Section 402 of the CWA* This section of the CWA established the National Pollutant Discharge Elimination System (NPDES).
- 404** *Section 404 of the CWA* This section of the CWA is intended to control discharges of dredge or fill materials. Section 404 required permits to be issued for discharging dredged or fill materials into navigable water at specific disposal sites. This process is currently administered by the U.S. Army Corps of Engineers in conjunction with the DEQ.
- 503** *Section 503 of the CWA* These rules were promulgated on February 19, 1993 and provide for disposal and reuse of sewage sludge that does not exceed the ceiling concentration as expressed in table 1 of the rule. The rule also requires that sewage sludge, based upon its proposed use be treated for pathogen and vector attraction reduction. Land application, incineration, and surface disposal practices are the required disposal alternatives. Domestic septage requirements are addressed in the rule in addition to the sludge requirements. Oklahoma rules for both sewage sludge and septage that meet the 503 requirements have been presented for approval.
- 604** *Section 604(b) of the CWA* Water quality management planning program. This section contains a provision that 40% of the total available funds be designated to regional public comprehensive planning organizations. These comprehensive planning organizations are designated by the Governor to receive funds under the 604(b) program. Currently, INCOG and ACOG are designated as comprehensive planning organizations. The designation of a comprehensive planning organization is at the discretion of the Governor.
- 7Q2** *Seven Day, two-year low flow* The design flow for determining allowable discharge load to a stream. The flow is calculated as a moving average of seven consecutive days for each year in a given record. These seven-day low flow values are ranked in ascending order. An order number (m) is calculated based upon the number of years of record (n), with a recurrence interval (R) of two years, as  $m=(n+1)/R$ , where  $R=$ two years. A value of flow corresponding to the  $m^{\text{th}}$  order is taken as the seven-day, two-year low flow for those historical data.

**ACRONYMS AND DEFINITIONS**

<b>Acute Wet Testing</b>	WET testing, which measures short-term lethality to a test species over a 48-hour period.
<b>allotment</b>	State Revolving Funds that are available for obligation. Allotments are made on a formula or other basis, which Congress specifies for each fiscal year.
<b>alternative technology</b>	Proven wastewater treatment processes and techniques which provide for the reclaiming and reuse of water, productively recycle wastewater constituents or otherwise eliminate the discharge of pollutants, or recover energy. Specifically, alternative technology includes land application of effluent and sludge; aquifer recharge; aquaculture; direct reuse (non-potable); horticulture; revegetation of disturbed land; containment ponds; sludge composting and drying prior to land application; self-sustaining incineration; methane recovery; individual and on-site systems; and small diameter pressure and vacuum sewers and small diameter gravity sewers carrying partially or fully treated wastewater.
<b>APA</b>	<i>Administrative Procedures Act</i>
<b>applicant</b>	Any municipality, as defined for the State Revolving Fund, that submits a preapplication/application for financial assistance in accordance with these rules and regulations.
<b>appropriation</b>	Statutory authority that allows federal agencies to incur obligations and to make payments out of the Treasury for specific purposes.
<b>architectural or engineering services</b>	Consultation, investigations, reports, or services for design-type projects within the scope of the practice of architecture or professional engineering.
<b>assimilative capacity</b>	The greatest amount of loading a waterbody can receive and still maintain the water quality standards designated for that waterbody.
<b>AST</b>	<i>Advanced Secondary Treatment</i> Essentially the same as AWT.
<b>authorization</b>	Legislation which authorizes the appropriation of funds to implement program activities. It does not provide any money, only the appropriation act itself permits the withdrawal of funds from the Treasury.
<b>AWT or AT</b>	<i>Advanced Wastewater Treatment</i> Treatment of wastewater effluent at a higher level than secondary. This process usually involves the addition or removal of chemical components during treatment.
<b>BAT</b>	<i>Best Available Technology</i> Economically Achievable. A term derived from Section 301 of the CWA in which effluent limitations for categories and classes of point source, other than publicly owned treatment works, shall require application of the best available technology economically achievable for such category or class. BAT effluent limitations guidelines, in general, represent the

	best existing performance in the category or subcategory for control of non-conventional and toxic pollutants.
<b>BCT</b>	<i>Best Conventional Pollutant Control Technology.</i> A term derived from Section 301 of the CWA in which effluent limitations for categories and classes of point source, other than publicly owned treatment works, shall require application of the best conventional pollutant control technology for such category or class. BCT effluent limitations guidelines, in general, represent the best existing performance in the category or subcategory for control of conventional pollutants. BCT is not an additional limitation but replaces BAT for the control of conventional pollutants.
<b>BPT</b>	<i>Best Pollutant Control Technology Currently Available.</i> A term derived from Section 301 of the CWA in which effluent limitations for categories and classes of point source, other than publicly owned treatment works, shall require application of the best pollutant control technology currently available for such category or class. BPT effluent limitations guidelines are generally based on the average of the best existing performance by plants of various sizes, ages and unit processes within the category or subcategory for the control of familiar pollutants (i.e., conventional pollutants and some metals).
<b>binding commitment</b>	Legal obligations by the State to the local recipient that define the terms and the timing for assistance under the State Revolving Fund.
<b>BMP</b>	<i>Best Management Practice</i> A technique that is determined to be the most effective, practical means of preventing or reducing pollutants from Nonpoint sources in order to achieve water quality goals.
<b>BOD5</b>	<i>Biochemical Oxygen Demand</i> The BOD5 of a water is an amount of oxygen required by microorganisms while stabilizing decomposable organic matter under aerobic conditions. The test is important in the evaluation of purification capacity of a stream or other body of water. The test requires five days of laboratory time and results may vary when toxic substances are present which affect bacteria.
<b>BPWTT</b>	<i>Best Practical Waste Treatment Technology</i> A term derived from Section 201 of the CWA in which waste treatment management plans and practices shall provide for the application of the best practical waste treatment technology before any discharge into receiving waters.
<b>building</b>	The erection, acquisition, alteration, remodeling, improvement or extension of treatment works.
<b>CAA</b>	<i>Clean Air Act</i> Public Law 95-396, this includes 1970 amendments to the Clean Air Acts of 1963-67 which authorizes the setting of tough, uniform national ambient air quality standards to safeguard public health and welfare and upgrade the quality of American life.

<b>capitalization grant</b>	An agreement between EPA and the states whereby federal dollars are made available to partially fund a State Revolving Fund (SRF).
<b>CBOD5</b>	<i>Carbonaceous Biochemical Oxygen Demand</i> That portion of the BOD that is not due to oxidation of nitrogenous compounds.
<b>CFR</b>	<i>Code of Federal Regulations</i> A codification of the general and permanent rules published in the Federal Register by the Executive Departments and agencies of the Federal Government.
<b>Chronic WET testing</b>	WET testing, which measures long term lethal and sublethal effects to specific aquatic animal test species over a 7 day period.
<b>COD</b>	<i>Chemical Oxygen Demand</i> The COD test is used extensively in the measurement of pollution strength of domestic and industrial wastes. The COD test measures the total amount of oxygen needed to completely oxidize the waste to carbon dioxide and water. The test employs a strong oxidizing agent to oxidize all organic compounds present in the waste. The test is more reliable than the BOD test and can be completed in about three hours.
<b>collector sewer</b>	The common lateral sewers, within a publicly owned treatment system which are primarily installed to receive wastewater directly from facilities which convey wastewater from individual systems, or from private property, and which include service "Y" connections designed for connection with those facilities including: Crossover sewers connecting more than one property on one side of a major street, road, or highway to a lateral sewer on the other side when more cost effective than parallel sewers; and Pumping units and pressurized lines serving individual structures or groups of structures when such units are cost effective and are owned and maintained by the recipient.
<b>combined sewer</b>	A sewer that is designed as a sanitary sewer and a storm sewer.
<b>construction</b>	Any one or more of the following: preliminary planning to determine the feasibility of treatment works, engineering, architectural, legal, fiscal, or economic investigations or studies, surveys, designs, plans, working drawings, specifications, procedures, or other necessary actions, erection, building, acquisition, alteration, remodeling, improvement, or extension of treatment works, or the inspection or supervision of any of the foregoing items.
<b>contingency section</b>	The planning portion of the priority list consisting of projects which may receive loans due to bypass provision or due to additional funds becoming available.
<b>CPP</b>	<i>Continuing Planning Process</i> A document which describes present and planned water quality management programs and the strategy to be used by the State in conducting these programs.
<b>Critical dilution</b>	An effluent dilution, expressed as a percentage, representative of the dilution afforded a wastewater discharge according to the appropriate Q*-dependent chronic mixing zone equation for

	chronic WET testing. The critical dilution for acute WET testing is 100%.
<b>critical effluent flow</b>	The point source effluent waste flow used in water quality modeling of a pollutant.
<b>cross-cutting laws and orders</b>	Federal laws and authorities that apply to all activities supported with funds "directly made available by" capitalization grants.
<b>cfs</b>	cubic foot per second.
<b>CWA or "the Act"</b>	<i>Clean Water Act</i> Public Law 92-500 enacted in 1972 provides for a comprehensive program of water pollution control. Two goals are proclaimed in this Act: 1) to achieve swimmable, fishable waters wherever attainable by July 1, 1983, and 2) by 1985 eliminate the discharge of pollutants into navigable waters.
<b>daily discharge</b>	The discharge of a loading measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling.
<b>Dilution series</b>	A set of proportional effluent dilutions for acute or chronic WET testing based on a specified critical dilution, which is typically the next-to-highest dilution in the series.
<b>DO</b>	<i>Dissolved Oxygen</i> DO concentrations range from a few parts per million up to about 10 ppm for most Oklahoma streams. A level of DO around 7 ppm is essential to sustain desired species of game fish. If DO drops below 5 ppm the danger of a fish kill is present and malodorous conditions will result. The major factors determining DO levels in water are temperature, atmospheric pressure, plant photosynthesis, rate of aeration and the presence of oxygen demanding substances such as organic wastes. In addition to its effect on aquatic life, DO also prevents the chemical reduction and subsequent movement of iron and manganese from the sediments and thereby reduces the cost of water treatment.
<b>DO target</b>	<i>Dissolved Oxygen Target</i> The dissolved oxygen concentration to be met using a particular water quality model so to meet a DO criterion corresponding to the maintenance of a beneficial use.
<b>Dynamic (unsteady-state) simulation</b>	Conditions at one or more points in a system being modeled change with time. Dynamic simulations approximate the response of a system to time-variable changes in the loads entering the system.
<b>EIS</b>	<i>Environmental Impact Statement</i> A mandatory statement process required for federal agencies. An EIS is required before a federal agency reaches a decision on a proposed major action, which may significantly affect the environment. The statement must analyze in detail the likely environmental consequences of action and make the analysis available to the public.
<b>enforceable requirements of the Act</b>	Those conditions or limitations of NPDES permits which, if violated, could result in the issuance of a compliance order or

initiation of a civil or criminal action. If a permit has not been issued, the term shall include any requirement, which would be included in the permit when issued. Where no permit applies, the term shall include any requirement which is necessary to meet applicable criteria for best practicable wastewater treatment technology (BPWTT).

<b>Equivalency projects</b>	Projects, cited by the Board as being funded up to an amount equivalent to the capitalization grant and which meet the sixteen specific Title II requirements.
<b>excessive infiltration/inflow</b>	The quantities of infiltration/inflow which can be economically eliminated from a sewer system as determined in a cost-effectiveness analysis that compares the costs for correcting the infiltration/inflow conditions to the total costs for transportation and treatment of the infiltration/inflow.
<b>FIFRA</b>	<i>Federal Insecticide, Fungicide and Rodenticide Act</i> Public Law 94-140 which provides for broad government pre-market clearance and control of pesticides to ensure that they do not pose unreasonable adverse effects on humans or the environment.
<b>fundable portion</b>	That portion of the Project Priority List which includes projects scheduled for financial assistance during the funding year.
<b>funding year</b>	The first year of the planning period represented by a project priority list.
<b>FY</b>	<i>Fiscal Year</i> A twelve month period for which budgetary appropriations are allocated. The fiscal year for the Federal Government begins October 1 and ends on September 30. The State of Oklahoma's fiscal year begins July 1 and ends June 30.
<b>Geometric Mean</b>	The antilog of the mean of a set of log-transformed data. For the purposes of performing a reasonable potential evaluation in those cases where only one data value is available that single effluent data value will be considered the geometric mean.
<b>Harmonic Mean</b>	The reciprocal of the mean of the reciprocals of a set of data.
<b>HQW</b>	<i>High Quality Waters</i> Waterbodies that are prohibited from having any point source discharge(s) or alteration of any existing point source discharge(s) which would result in an increase in the concentration or an increase of pollutant loading of any constituent in the receiving water. The water quality exceeds that necessary to support propagation of fishes, shellfishes, wildlife, and recreation as described in Rule 200.3, Anti-Degradation Policy Statement.
<b>HSWA</b>	<i>Hazardous and Solid Waste Amendments</i> The 1984 Act (Public Law 98-616) that significantly expanded both the scope and coverage of RCRA.
<b>I/A</b>	<i>Innovative and Alternative</i> Innovative technology deals with wastewater treatment processes and techniques that are being developed which have not been fully proven to reclaim and reuse

water. Alternative technology deals with proven wastewater treatment processes and techniques, which provide for the reclaiming and reuse of water.

**infiltration**

Water other than wastewater that enters a sewer system (including sewer service connections and foundation drains) from the ground through such means as defective pipes, pipe joints, connections, or manholes. Infiltration does not include and is distinguished from inflow.

**inflow**

Water other than wastewater that enters a sewer system (including sewer service connections) from sources such as, but not limited to, roof leaders, cellar drains, yard drains, area drains, drains from springs and swampy areas, manhole covers, cross connections between storm sewers and sanitary sewers, catch basins, cooling towers, storm waters, surface runoff, street wash waters, or drainage. Inflow does not include and is distinguished from infiltration.

**initiation of operation**

The date specified by the recipient on which use of the project begins for the purposes that it was planned, designed, and built.

**innovative technology**

Developed wastewater treatment processes and techniques which have not been fully proven under the circumstances of their contemplated use and which represent a significant advancement over the state of the art in terms of significant reduction in life cycle cost or significant environmental benefits through the reclaiming and reuse of water, otherwise eliminating the discharge of pollutants, utilizing recycling techniques such as land treatment, more efficient use of energy and resources, improved or new methods of waste treatment management for combined municipal and industrial systems, or the confined disposal of pollutants so that they will not migrate to cause water or other environmental pollution.

**Intended Use Plan**

A document prepared each year by the State, which identifies the intended uses of the funds in the SRF and describes how those uses support the goals of the SRF.

**interceptor sewer**

A sewer which is designed for one or more of the following purposes:

To intercept wastewater from a final point in a collector sewer and convey such wastes directly to a treatment facility or another interceptor.

To replace an existing wastewater treatment facility and transport the wastes to an adjoining collector sewer or interceptor sewer for conveyance to a treatment plant.

To transport wastewater from one or more municipal collector sewers to another municipality or to a regional plant for treatment.

To intercept an existing major discharge of raw or inadequately treated wastewater for transport directly to another interceptor or to a treatment plant.

**Intermittent lethality**

Two or more lethal effect test failures of a routine acute or chronic WET test within any 18-month period.

**LA**

*Load Allocation* The portion of a receiving water's loading capacity that is attributed either to one of its existing or future Nonpoint sources of pollution or to natural background sources.

**LAB CERT**

*Laboratory Certification* DEQ program which sets out the rules and regulations for the laboratory certification program. Its objective is to establish uniform methods of water and wastewater analysis. **LC** *Lethal Concentration* The concentration of certain chemicals or substances that can have lethal effects on living things.

**LC<sub>50</sub>**

The concentration of a toxicant in an external medium that is lethal to fifty percent of the test animals for a specified period of exposure.

**load or loading**

The amount of matter or thermal energy that is introduced into a receiving water. A load may be caused by man (a pollutant) or by nature (natural background load). For oxygen demanding material, load may be expressed separately for separate components (e.g. CBOD, NBOD), or may be expressed as a total oxygen demand.

**loan**

An agreement between the State and the local recipient through which the SRF provides funds for eligible assistance and the recipient promises to repay the principal sum to the SRF over a period not to exceed 20 years at an interest rate established at or below market rates (may be interest free).

**long-term average flow**

An arithmetic average stream flow over a representative period of record.

**maintenance**

Preservation of functional integrity and efficiency of equipment and structures. This includes preventive or corrective maintenance and replacement of equipment.

**Maximum likelihood estimator**

For the purposes of performing reasonable potential evaluations the maximum likelihood estimator for a particular upper percentile is calculated assuming the population of values fit a log-normal distribution with a coefficient of variation of 0.6. This can be described as:

where:

$$C_p = C_{mean} * \exp(Z_p * \sigma - 0.5 * \ln(CV^2 + 1))$$

(1)

$Z_p$  = normal distribution factor at  $p^{\text{th}}$  percentile

$C_{mean}$  = geometric mean

For the 95th percentile the maximum likelihood estimator is typically calculated as:

$$C_{95} = 2.13 \cdot C_{mean} \quad (2)$$

If a large data set of effluent concentrations is available,  $C_{95}$  may not need to be estimated, the 95th percentile value can be calculated from the data.

**mean annual average flow**

The annual mean flow found in "Statistical Summaries", USGS publication no. 87-4205, or most recent version thereof, or other annual mean flow as approved by the Oklahoma Water Resources Board or the permitting authority.

**MBE/WBE participation**

The federal requirement for negotiation of a "fair share" objective for minority and women owned businesses (MBE/WBE) applies to assistance in an amount equal to the capitalization grant.

**MGD**

*Million Gallons per Day* Measurement of average daily flow from municipal and industrial point sources.

**MQL**

*Minimum Quantification Level* The lowest concentration at which a particular substance can be quantitatively measured with a defined precision level, using approved analytical methods.

**mixing zone**

When a liquid of a different quality than the receiving water is discharged into the receiving water, a mixing zone is formed. Concentration of the liquid within the mixing zone decreases until it is completely mixed with the receiving water. In Oklahoma, the regulatory mixing zone is described as follows:

In streams, the mixing zone extends downstream a distance equivalent to thirteen (13) times the width of the water within the receiving stream at the point of effluent discharge and encompasses 25% of the total stream flow of the 7Q2 or 1 cfs, whichever is larger, immediately downstream of the point of effluent discharge. Acute toxicity within the mixing zone is prohibited. The water quality in a portion of the mixing zone may be unsuitable for certain beneficial uses. Where overlapping mixing zones occur because of multiple outfalls, the total length of the mixing zone will extend thirteen (13) stream widths downstream from the downstream discharge point.

Mixing zones in lakes shall be designated on a case-by-case basis. However, for permitting purposes, the mixing zone is defined to extend a radius of 100 feet from the source.

**NEPA**

*National Environmental Policy Act* The cornerstone of the environmental impact statement process. The Act requires each federal agency to issue regulations detailing the policies and procedures it will follow for the impact statement process.

<b>NIPDWR</b>	<i>National Interim Primary Drinking Water Regulations</i> The EPA established the NIPDWR to provide minimum national drinking water standards for all public water.
<b>NOEC<sub>L</sub></b>	(No Observed Lethal Effect Concentration-Lethal) means the greatest tested effluent dilution in a WET test at and below which lethality to test organisms does not occur that is statistically different from the control (0% effluent) at the 95% confidence level.
<b>NOEC<sub>S</sub></b>	(No Observed Sublethal Effect Concentration) means the greatest tested effluent dilution in a WET test at and below which a sublethal effect to test organisms does not occur that is statistically different from the control (0% effluent) at the 95% confidence level.
<b>non-excessive infiltration</b>	The quantity of flow which is less than 120 gallons per capita per day (domestic base flow and infiltration) or the quantity of infiltration, which cannot be economically and effectively eliminated from a sewer system as determined in a cost-effectiveness analysis.
<b>non-excessive inflow</b>	The rainfall induced peak inflow rate which does not result in chronic operational problems related to hydraulic overloading of the treatment works during storm events. These problems may include surcharging, backups, bypasses, and overflows.
<b>NPDES</b>	<i>National Pollutant Discharge Elimination System</i> A permit program established by Section 402 of the CWA. This program regulated discharges into the Nation's waters from point sources, including municipal, industrial, commercial and certain agricultural sources.
<b>NPS</b>	<i>Nonpoint source.</i> The contamination of the environment with a pollutant for which the specific point of origin may not be well defined and includes but is not limited to agricultural storm water runoff and return flows from irrigated agriculture.
<b>NPS Mgmt.</b>	<i>Nonpoint Source Management</i> Section 319 of the CWA.
<b>NSPS</b>	<i>New Source Performance Standards.</i> A term derived from Section 301 of the CWA in which effluent limitations for categories and classes of point source, other than publicly owned treatment works, shall require application of the new source performance standards for such category or class (applies to new industrial dischargers which are determined to be new sources). NSPS are based on the performance of the best available demonstrated control technology in the category or subcategory for all pollutants (conventional, non-conventional and toxic pollutants).
<b>OAC</b>	<i>Oklahoma Administrative Code</i>
<b>OPDES</b>	<i>Oklahoma Pollutant Discharge Elimination System</i> A permit program established by 27A O.S. 1993 Supp., § 2-6-201 et seq. (see also Section 402 of the CWA). This program regulated

	discharges into Oklahoma's waters from point sources, including municipal, industrial, commercial and certain agricultural sources.
<b>operable treatment works</b>	A treatment works that, upon completion, will meet the enforceable requirements of the Act.
<b>operation</b>	Control of the unit processes and equipment which make up the treatment works. This includes financial and personnel management, records, laboratory control, process control, safety and emergency operation planning.
<b>operation and maintenance</b>	Activities required to assure the dependable and economical function of treatment works.
<b>ORW</b>	<i>Outstanding Resources Waters</i> These are waters which constitute outstanding resources or are of exceptional recreational and/or ecological significance as described in Rule 200.4, Anti-Degradation Policy Statement. They are prohibited from having any new point source discharge(s) or increased load from existing point source discharge(s).
<b>O.S.</b>	<i>Oklahoma Statutes</i>
<b>PCBs</b>	<i>Polychlorinated Biphenyls</i> Compounds that are produced by replacing hydrogen atoms in biphenyl with chlorine. They are poisonous environmental pollutants.
<b>PCS</b>	<i>Permit and Compliance System</i> A computerized management information system for tracking permit, compliance, and enforcement status for the NPDES program under the Clean Water Act. PCS is designed to support the individual NPDES administrative needs of the states and EPA Regional offices and provides a uniform means of communication between states, regions, and EPA Headquarters. The PCS database resides on a mainframe computer at EPA's National Computer Center in Research Triangle Park, North Carolina and is accessible through a network of user terminals across the country.
<b>Persistent lethality</b>	The repeated failure of an acute WET test or the repeated 'lethal effect of a chronic WET test. If the required WET testing frequency is monthly, repeated failure occurs upon the failure of two out of three consecutive monthly tests for the same test species. If the required WET testing frequency is other than monthly, repeated failure occurs upon the failure of the required test plus one of the two monthly retests for the same test species in the ensuing two-month period.
<b>Persistent sublethality</b>	Two consecutive chronic sublethal effect test failures.
<b>P.L.</b>	<i>Public Law</i> Law concerned with regulating relations of individuals with the government and the organization and conduct of the government itself.

<b>planning</b>	The process of evaluating alternative solutions to water pollution problems, and through a systematic screening procedure, selecting the most cost effective environmentally sound alternative.
<b>planning portion</b>	The part of the Project Priority List containing all projects outside the fundable portion of the list that may, under anticipated allotment levels, receive funding during the five-year planning period represented by the list.
<b>POTW</b>	<i>Publicly Owned Treatment Works</i> A treatment facility owned and operated by a municipality, governmental organization, or Indian Tribe.
<b>Project</b>	The scope of work for which SRF assistance is provided. The scope of work is for construction and design, or construction of an operable treatment works or segment thereof. The project must be part of an operable treatment works. The principal purpose of both the project and the operable treatment works must be for the treatment of domestic users' discharges of the jurisdiction, community, sewer service area, region, or the district concerned.
<b>project completion</b>	The date operations of the treatment works are initiated or are capable of being initiated, whichever is earlier.
<b>project performance standards</b>	The performance and operations requirements applicable to a project including the enforceable requirements of the Act and the specifications, including the quantity of excessive infiltration and inflow proposed to be eliminated, which the project is planned and designed to meet.
<b>Project Priority List</b>	A continuous list of projects in order of priority for which SRF assistance is expected during a five-year planning period.
<b>project priority points</b>	The total number of points assigned to a project by using the priority ranking formula.
<b>PS</b>	<i>Point Source</i> Any discernible, confined and discrete conveyance or outlet including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure container, rolling stock or vessel or other floating craft from which pollutants are or may be discharged into waters of the state. The term "point source" shall not include agricultural storm water runoff and return flows from irrigated agriculture.
<b>Q*</b>	The ratio of the effluent regulatory flow ( $Q_e$ ) to the receiving water regulatory flow ( $Q_u$ ).
<b>quasi-dynamic (or quasi-steady state) simulation</b>	One or more boundary conditions is constant, but other conditions vary with time. For example, QUAL2E can be used to compute the average response of a stream to specified constant flows and loads, but the user can also specify time varying meteorological conditions to simulate the effect of variable sunlight, air temperature, and wind speed on water quality conditions.

<b>RCRA</b>	<i>Resource Conservation and Recovery Act of 1976</i> This Act, also known as Public Law 94-580, amended the Solid Waste Disposal Act of 1965. The Act has two main objectives: 1) to broaden the national waste management program to better protect the public health and the environment, and 2) to conserve natural resources through waste reduction, materials and energy recovery.
<b>reallotment</b>	Allotment of previously allotted unused funds.
<b>recipient</b>	A municipality or other entity which receives assistance under the SRF program.
<b>repayment</b>	Principal and interest payments on loans which must be credited directly to the SRF.
<b>replacement</b>	Expenditures for obtaining and installing equipment, accessories, or appurtenances during the useful life of the treatment works necessary to maintain the capacity and performance for which such works are designed and constructed.
<b>responsible bidder</b>	A prospective contractor that currently meets the minimum standards of financial and technical ability to perform the tasks identified in the project specifications.
<b>revenue program</b>	A formally documented determination of charges which is designed to provide revenues for operation and maintenance (including replacement), and local debt service for treatment works.
<b>RRT</b>	<i>Regional Response Team</i> A regional group composed of federal agencies and states within the region which are called upon in the event of an emergency.
<b>SDWA</b>	<i>Safe Drinking Water Act</i> Public Law 95-535 was passed in 1974 and amended in 1977. The Act mandates two major program initiatives- one aimed at ensuring the safety of the Nation's public water supplies and other designed to protect underground sources of drinking water from contamination through injection wells.
<b>SEA</b>	<i>State/Environmental Protection Agency Agreement</i> An agreement negotiated between EPA and the State which defines State and EPA responsibilities and funding levels. The Agreement encourages program coordination, simplified paperwork and improved program accountability.
<b>SIC</b>	<i>Standard Industrial Classification</i> The statistical classification standard developed by the Federal government for use in the classification of establishments by type of activity in which they are engaged. The Standard Industrial Classification covers the entire field of economic activities: agriculture, forestry, fishing, hunting and trapping; mining; construction; manufacturing; transportation, communications, electric, gas, and sanitary services; wholesale trade; retail trade; finance, insurance and real estate; personal, business, professional, repair, recreation and other services; and public administration. Under the SIC, establishments

are assigned four-digit codes (SIC Codes) which identify the primary activity or activities in which they are engaged. SIC Codes can be found in the Standard Industrial Classification Manual 1987, published by the Executive Office of the President, Office of Management and Budget.

<b>SIP</b>	<i>State Implementation Plan</i> A plan required by Section 110 of the Clean Air Act. The plan provides for the implementation, maintenance and enforcement of primary and secondary standards of air quality, which are consistent with national standards.
<b>SRF</b>	<i>State Revolving Fund</i> Funds for loans or providing other assistance for pollution control projects established through capitalization grants from EPA and State matching funds. <i>S.S. State Strategy</i> A document prepared and updated by the State. The document is a five year strategy for controlling water pollution problems.
<b>SS</b>	<i>Suspended Solids</i> The solid material that originates mostly from disintegrated rocks and is suspended in water. It includes biochemical and chemical precipitates and decomposed organic material.
<b>SSSES</b>	<i>Sewer System Evaluation Survey</i> A study which shall identify the location, estimated flow rate, method of rehabilitation, and cost of rehabilitation versus the cost of transportation and treatment for each defined source of infiltration/inflow.
<b>state match</b>	Funds equaling at least 20% of the amount of the capitalization grant which the State must deposit into the SRF.
<b>statutory requirements</b>	The sixteen specific Title II requirements which are attached to Section 212 publicly-owned treatment works funded up to an amount equivalent to the capitalization grant.
<b>steady-state simulation</b>	Conditions at all points in a system being modeled are constant with time. Steady-state simulations use averaged loads and flows entering the system over specified periods of time to compute the average response in the system.
<b>STORET</b>	<i>Storage and Retrieval System</i> An EPA computerized management information system which allows the user to store and retrieve water quality information.
<b>storm sewer</b>	A sewer designed to carry only storm waters, surface runoff, street wash waters, and drainage.
<b>STP</b>	<i>Secondary Treatment Plant</i> A sewage treatment facility which utilizes oxidative activity of organisms to stabilize the organic components of sewage.
<b>SWS</b>	<i>Sensitive Public and Private Water Supplies</i> Waterbodies designated with this limitation are prohibited from having any new point source discharge(s) or increased load from existing point source discharge(s). These are waters, which constitute sensitive public and private water supplies.

<b>TMDL</b>	<i>Total Maximum Daily Load</i> The sum of individual wasteload allocations (WLA) for point sources, safety, reserves; and loads from Nonpoint source and natural backgrounds.
<b>TOC</b>	<i>Total Organic Carbon</i> Measure of the organic matter contained in a sample based upon the amount of carbon it contains as measured by the complete oxidation of the matter to carbon dioxide.
<b>transfer of reserves</b>	The optional transfer of specific set-asides from a State's Title II allotment into an established SRF.
<b>treatment works</b>	Any devices and systems used in the storage, treatment, recycling, and reclamation of municipal sewage, including intercepting sewers, outfall sewers, sewage collection systems, pumping, power, and other equipment, and their appurtenances. In addition "treatment works" means any other method or system for preventing, abating, reducing, storing, treating, separating, or disposing of municipal waste, including storm water runoff, including waste in combined storm water and sanitary sewer systems.
<b>TSCA</b>	<i>Toxic Substance Control Act</i> Public Law 94-469 which authorizes EPA to obtain data from industry on selected chemical substances and mixtures and to regulate the substances when needed.
<b>TSS</b>	<i>Total Suspended Solids</i> The complete amount of solid matter suspended or dissolved in water or wastewater.
<b>TXC LST</b>	<i>Toxics List</i> Section 304(l) of the CWA.
<b>UIC</b>	<i>Underground Injection Control</i> A program under the Safe Drinking Water Act intended to regulate injection activities to prevent contamination of underground sources of drinking water.
<b>USDA</b>	<i>United States Department of Agriculture</i> A federal agency that ensures that fertilizers necessary for agricultural production are available and makes certain the fertilizers do not harm the environment.
<b>user charge</b>	A charge levied on users of a treatment works for the proportionate share of the cost of operation and maintenance (including replacement) of such works.
<b>Value Engineering</b>	A specialized cost control technique which uses a systematic and creative approach to identify and to focus on unnecessarily high costs in a project in order to arrive at cost savings without sacrificing the reliability or efficiency of the project.
<b>WLA</b>	<i>Wasteload Allocation</i> "A wasteload allocation for a river segment is the assignment of target loads to point sources so as to achieve Water Quality Standards in the most efficient manner" (303 guidelines). The wasteload allocation is designed to allocate or allow certain quantities, rates or concentration of pollutants discharged from contributing point sources, which empty their effluent into the same river segment. The purpose of the wasteload

allocation is to eliminate an undue "wasteload burden" on a given stream segment.

<b>WLE</b>	<i>Wasteload Evaluation</i> The process of assessment and estimation of pollutant loading to waterbodies from all sources; the prediction of resultant pollutant concentrations, and subsequent determination and allocation of the TMDL among the different pollutant sources in such a manner that water quality standards are maintained.
<b>WQM</b>	<i>Water Quality Management</i> A term associated with the various state programs found under the CWA. The various program elements under the CWA form the State and Area wide Quality Management Plans.
<b>WQS</b>	<i>Water Quality Standards</i> Standards established to serve as goals for the water quality management plans (Section 208) and as benchmark criteria for the NPDES (Section 402) permit process. State Water Quality Standards at a minimum consist of beneficial use classification for navigable water, water quality criteria to support those uses and a statement of policy which prevents the degradation of waters no matter what the beneficial use.
<b>WQD</b>	<i>Water Quality Division</i> The section of the DEQ which regulates the discharge of non-industrial waste from any sewer system and waste from any industrial system into any water of the State and handles permitting of changes made to public water supplies and industrial and municipal permitted discharges.
<b>zone of impact</b>	The portion of a stream between the most upstream pollutant source and a downstream limit located by the point at which water quality has recovered to the background quality at a point immediately upstream of the most upstream pollutant source.
<b>zone of passage</b>	<p>A three-dimensional zone expressed as a volume in the receiving stream through which mobile aquatic organisms may traverse the stream past a discharge without being affected by it. In Oklahoma, the regulatory zone of passage is described as follows:</p> <p>A zone of passage shall be maintained within the stream at the outfall and adjacent to the mixing zone that shall be no less than seventy-five percent (75%) of the volume of flow. Water quality standards shall be maintained throughout the zone of passage.</p> <p>Zones of passage in lakes shall be designated on a case-by-case basis.</p>

#### **USE OF DAILY MAXIMUM VALUES**

This guidance does not provide a specific methodology for considering daily maximum permit values when considering monitoring/reporting reductions. However, EPA is in the process of implementing a revised definition of SNC that accounts for daily maximum violations. The new definition will be included in the entry criteria of this guidance at a later date. In the interim, permitting authorities should consider such situations on a case-by-case basis. There may be concerns over instances where, for example, there are acutely toxic conditions in a receiving water due to violations of daily maximum permit limitations. In such cases, the permitting authority may elect to maintain higher monitoring levels. In addition, it is important to recognize that dischargers who frequently violate daily maximum permit limitations will likely be unable to achieve high levels of performance in monthly average limits and effectively would not be eligible to participate in this program on that basis. In addition, such facilities may also trigger one of the various compliance/enforcement-based entry criteria.

#### **THE TMDL PROCESS**

The Total Maximum Daily Load (TMDL) process provides a reasonable, technically sound, and consistent procedure for measuring and managing the impact of point and non-point source discharges on the quality of Oklahoma waterbodies. State water quality standards (WQS) serve as the benchmark from which to measure these impacts. Recommended reductions in pollutant loadings developed as part of the TMDL process serve as a framework within which the various State agencies can work to ensure that both point and non-point source discharges do not contribute to violations of water quality standards.

Water quality standards include three elements: designated beneficial uses, narrative or numerical criteria (physical, chemical, and biological) to protect the designated beneficial uses, and an antidegradation policy. Waters identified as not meeting any one of these components of water quality standards require the development and implementation of water-quality based point and non-point source pollution control measures.

The TMDL process begins by determining which waters do not meet, or are not expected to meet, water quality standards after the implementation of technology-based controls. Waters identified through this process are considered impaired and must be prioritized so that an overall management plan can be developed to reduce the excess pollutants. Then, the quantity and quality of pollutant sources is determined. Once quantified, reductions for point source and non-point sources that are protective of water quality standards are determined. After these reductions are implemented, a follow-up assessment is made to determine their effectiveness.

#### **THE TMDL OBJECTIVE**

The objective of a TMDL is to achieve water quality standards by allocating allowable loads and implementing appropriate control actions on the various pollutant sources.

The first step in developing a TMDL involves establishing a goal, or target, which is usually related to achieving a particular numerical or narrative water quality criterion. Because of the complexity of the WQS, this goal may be specific to a particular pollutant or may involve a number of pollutants. In addition, this goal may be set differently depending on the type of waterbody. Multiple targets are appropriate in cases where different requirements must be applied to different points in the waterbody or where differing requirements are associated with multiple uses. A phased approach can be appropriate in some cases.

## **ASSESSMENT OF EXISTING CONDITIONS**

### **WATER QUALITY**

The first step in assessing the current conditions is to gather available data and information on the water body. At a minimum, obtain the water quality data (if available) that was used for listing the water body. When Federal funds are committed to a project then a quality assurance project plan (QAPP) will be developed for all data collection activities.

### **EXISTING DATA**

The sufficiency and adequacy of existing data will be evaluated and described. The DEQ will consider data to be sufficient and adequate when the data accurately characterize the conditions of the water body, watershed, pollutant, and pollutant sources throughout typical geographic and temporal conditions with reasonable certainty.

### **DATA REQUIREMENTS**

Some TMDL projects will require additional watershed information relating to particular water quality conditions, as existing data alone may be insufficient to support the analytical needs of TMDL projects. Data on low-flow conditions, storm-flow conditions, and seasonal variations should be gathered when appropriate to the situation.

### **POLLUTANT LOAD**

Before pollutant loads are allocated among sources, the location and types of sources, and the current and projected pollutant load for each source will be identified. Data needed for pollutant source analysis include:

#### **CURRENT LOADING**

Source contributions will be established by measuring pollutant loads directly, calculating or estimating loads from water quality and flow data, estimating loads with mathematical models, or using a combination of these methods.

#### **POLLUTANT SOURCE(S) ANALYSIS**

Before pollutant loads are allocated among sources, the location and types of sources, and the current and projected pollutant load (flow, concentration, permit limits) for each source must be identified. Examples of data needed for pollutant source analysis include:

- watershed and sub watershed boundaries
- hydrologic interaction between surface water and groundwater
- locations of stream segments
- locations of pollutant sources
- types of pollutant sources
- anticipated growth of discharges
- meteorological/rainfall data and runoff coefficients
- land uses and land cover
- soil types

## **DIFFERENTIATE POINT AND NONPOINT SOURCES**

An inventory will be developed of all known factors in the watershed, which influence water quality. These factors might include permitted industrial and municipal wastewater discharges, concentrated animal feeding operations (CAFOs), waste application sites, cropland, forestry operations, industrial stormwater, urban runoff, construction activities, and other sources such as natural background. This information will be collected and maintained by sub watershed where possible to enhance the identification of cause-and-effect relationships. The watershed inventory will be compiled from land-use data, special investigations, DEQ complaint investigations, DEQ permit databases, surface water monitoring data, and watershed stakeholder input.

## **MAXIMUM ALLOWABLE LOADING NECESSARY TO MEET WATER QUALITY STANDARDS**

A water body's loading capacity is an estimate of the maximum amount of pollutant loading the water body considering critical conditions (i.e. flow, temperature, etc.) can receive over time without exceeding water quality standards. Hydrological, biological, chemical, and pollutant fate and transport data are required to calculate a water body's loading capacity. The maximum loading capacities of a waterbody will be determined, in most cases, using a water quality model(s) developed specifically for the waterbody in question. The model used will be selected on a case-by-case basis and based on available resources, the identified pollutant source(s) and the availability of historical water quality data.

## **ALLOCATION OF LOADINGS**

### **ALLOCATION CONSIDERATIONS**

The following factors must be considered and incorporated when developing a loading, unless it is demonstrated that one or more of these factors is not relevant to the particular load allocation:

#### **FUTURE GROWTH**

Future growth (such as new sources and source expansion) will be considered when allocating pollutant loads. Loading allocations that will be implemented to achieve water quality standards in the future must account for foreseeable increases in pollutant loading. All anticipated increases in loading should be included in models or other analyses that project water quality responses or conditions into the relatively distant future.

#### **FLOW AND LOAD VARIATIONS**

Variability in hydrology and effluent discharge needs to be considered in allocating pollutant loads. The pollutant load and concentration can vary depending on a number of factors, including rainfall and normal seasonal variations.

#### **TEMPORAL VARIATIONS**

The period of time over which a total load will be evaluated for the purposes of TMDL loading allocation is a function of hydrologic and seasonal variations in pollutant loads. Determination of an appropriate time frame should focus on watershed conditions, including water quality, hydrology, source locations, and climatic patterns.

#### **ANTIBACKSLIDING**

When evaluating loading allocation alternatives, consideration must be given to the constraints imposed by the CWA antibacksliding requirements. These requirements generally prohibit